

# Readymix Supaflo

Supaflo is a new generation screeding product which is a great step forward in that it gives more benefits to specifiers and increases design flexibility. For the contractor, it is a solution that is far easier to apply. A flowing floor screed, Readymix Supaflo is based on calcium sulfate whereas traditional screeds are based on Portland cement. Ready to use, it offers a great many advantages over traditional screeds, namely:

- Speed of application
- Surface finish
- Attainable accuracy of placement and finishing
- Reduction in thickness
- Elimination or substantial reduction of movement joints

Using a flow applied screed means a far less labour intensive operation.

Screed thickness can be reduced compared with traditional screeds, so one gang of four men can place 2000m<sup>2</sup> or more accurately in a day. This is ten to twenty times more than with conventional materials. Supaflo is virtually self-compacting and flows easily into place, filling all voids and irregularities. It is precisely laser levelled to an accuracy of equal to or better than surface regularity SR2.

Compared with traditional screeds, shrinkage is minimal and is unlikely to occur. Therefore, curling is entirely eliminated as there is no differential shrinkage. It can be applied in all dry locations and in most situations where a conventional unbonded, floating or heated Portland cement screed could be used.

Flow applied screeds have grown in popularity in the last few years. In fact in some European countries half of all screeds are now flow applied.

## Authority

Readymix Supaflo complies with the requirements of European Standard prEN CCCC-2, Screed material and floor screeds, Part 2: screed material properties and requirements (draft). Readymix Supaflo is used to comply with their relevant British and/or European Standards.

## Composition

Calcium sulfate binder and selected aggregates are precisely weigh batched in the composition of Supaflo. Sophisticated admixtures are used in its formulation to enhance the plastic properties in order that ease of placing is aided, as is surface finishing. They may also contribute to improved final hardened properties of the screed.

## Manufacture

Supaflo is manufactured in most European countries where Readymix operates. In the UK, a network of over 50 specialists cover most of the country. The constituent materials are mixed under precisely controlled conditions, ensuring that components are entirely dispersed before the product is discharged into the delivery vehicle.

## Compliance and Testing

Supaflo binders are produced under stringently controlled conditions of BS EN ISO 9001. Specially produced flow table equipment is issued to Readymix staff and approved contractors after appraisal and calibration, ensuring accuracy of testing. Full traceability of aggregates is maintained by means of a computerised data recording and analysis system.

The technical department quality control function have a close relationship with all fully trained production staff.

Each batch of Supaflo is tested before despatch. In addition to this, approved contractors are required to carry out more acceptance tests before allowing discharge from the delivery vehicle.

## Performance

Excellent resistance to impact is provided by Readymix Supaflo, and it exceeds the requirements of the most exhaustive test value requirement. Its resistance to impact easily exceeds that offered by alternative traditional systems. Supaflo is self-compacting as it flows into its position, so that voids and poor compaction can become a thing of the past.

## Technical Properties

Flow (DIN 1060 test)	240-260mm
Plastic density	2060-2130kg/m <sup>2</sup>
BRE impact test	Less than 2mm
Flexural strength	4-6N/mm <sup>2</sup>
Drying shrinkage	Less than 0.02%
Time to light foot traffic	1 to 2 days
*Drying time	1 day/mm
Dry density	1950-2050kg/m <sup>2</sup>
Fire rating	Non combustible
Thermal expansion coefficient	0.01mm/mK
PH	11-12
Setting time	Not less than 3 hours

\*at 60% relative humidity +20°C

### Abrasion, impact and indentation

Supaflo complies with Building Research Test and indentation requirements of BS 8204, and compared with traditional screeds offers good resistance to abrasion and impact.

### Working Properties

The flowing and finishing properties of the product are increased by specially formulated admixtures, and as mentioned, Supaflo needs no compaction.

### Shrinkage

No drying shrinkage occurs, so movement joints are rarely necessary.

### Fire Protection

Supaflo is non-combustible as defined by BS 476: Parts 4 and 8.

### Effect of Frost

Before final strength is achieved suitable precautions should be taken against frost.

### Durability

**As Supaflo is not a wearing course, it requires covering with a suitable surface finish. It is not recommended for use in continuously wet areas, nor should it regularly be wetted. Therefore it should not be used for communal baths or showers, changing/washing areas of sports centres, abattoirs, external yards or similar.**

## Application and design with Supaflo

**As Supaflo may generally be laid substantially thinner than conventional materials due to the lack of voids and its high flexural strength, 35mm of Supaflo will replace 75mm of conventional material.**

### Site work

Supaflo is delivered to the site ready to use, and is pumped directly to the point of use. A typical pump output can deal with 150m horizontally and 60m vertically. It takes about  $25 \pm 5$  minutes to pump 5m<sup>3</sup> of Readymix Supaflo.

A steady supply should be delivered throughout the placement. If a break looks to be exceeding one hour, a temporary stop end should be formed using timber or another temporary barrier. The stop end should form a vertical barrier, which should be removed when the next section is placed. This should form either a separate but continuous run or use very firm and thorough mixing of the two to achieve homogeneity.

The Supaflo system should be treated as de-bonded. Ducts, services and similar are sealed against fluid loss in the flowing system.

The product should be pump placed onto a prepared membrane. This should have 5mm compressible plastic strips on all perimeter edges. The membrane can be plastic with taped joints or paper, and either heat-sealed or taped. As the system is laid on a debonding membrane of plastic or paper, minimal cleaning or surface preparation is required.

You may use underfloor heating 5 days after placing the screed. However the temperature should not be increased from the ambient by more than 10°C a day until the full operating temperature is reached.

**Supaflo should only be laid by contractors who are fully trained in its application.**

### Curing

In order that the necessary steps be taken to minimise excessive water loss in the first 24 hours, any unglazed or missing windows or doors should be temporarily blocked using plastic sheeting or a similar material. However, after 48 hours all windows and doors should be fully opened. Dehumidifiers may be used to force dry the product. Direct sun should always be avoided during early life.

### Hardening and drying

When covering a gypsum based screed like Supaflo for curing, it is essential that the material is dry. It is classed as "dry" when it has a moisture content of less than 1% if a permeable covering is to be applied (such as carpet), and less than 0.5% for any other covering. The fact that reduced screed thickness is achieved by using Supaflo leads to shorter drying times overall. The surface may take light traffic after 1 or 2 days, depending on drying conditions.

Screeds dry more quickly in the winter months as rooms which are heated are less humid and air is regularly exchanged. The humidity is often higher in summer.

If you intend to apply a floor covering directly to the screed, or if the vinyl is thin, the surface of the screed may need sanding or grinding. A mechanical surface grinder is usually used for this. Before the floor finish is applied, ensure that the surface is free from ground material.

### Application of a bonded floor covering

The screed must be primed in order to prevent drying due to suction when bonded floor coverings are applied directly onto Supaflo. This will make the application of adhesive much easier and will result in a more uniform layer, which is much smoother. The appropriate primer to use depends on the chemical make-up of the adhesive. For example, a calcium sulfate based adhesive will require the use of an acrylic, epoxy or similar primer should be used. For cementitious adhesives, the two materials need to be separated by an impermeable layer and so a polymeric sealer must be used.

## Contractors

Readymix Supaflo will only be supplied to approved contractors. Readymix can either provide the necessary training or can recommend an approved contractor, ensuring that the product is applied in the best way possible. Contractors are required to meet strict criteria in respect to Supaflo and the entire flooring system. In order to become approved, contractors must demonstrate that they have a commitment to training as well as a commitment to the development of the product and the market. The approved contractors take responsibility for the sub-base approval and preparation of the site sub-base. They are also responsible for the design and provision of all movement joint detailing, including the supply of materials and the provision and installation of debonding membranes.

Your approved contractor will also be able to advise on drying and curing times, early trafficking, priming, sealing, the application of the final floor surface and many other related topics.

## Yield

Yield per cubic metre for typical application thickness

Thickness (mm)	Area/m <sup>3</sup> (m <sup>2</sup> )
30	33
35	29
40	25
45	22